DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: SHADOW		Lake Area (ha):	14.00
Town:	WINDHAM	Maximum depth (m):	8.0
County:		Mean deptḥ (m):	4.1
River Basin:	Merrimack	Volume (m³):	575000
Latitude:	42°49' N	Relative depth:	2.0
Longitude:	71°14' W	Shore configuration:	1.58
Elevation (f	t): 159	Areal water load (m/yr)	: 9.45
Shore length	(m): 2100	Flushing rate (yr ⁻¹):	2.30
Watershed are	ea (ha): 275.3	P retention coeff.:	0.56
% watershed p	ponded: 0.0	Lake type: natura	l w/dam

BIOLOGICAL:	5 March 1987	27 August 1986
DOM. PHYTOPLANKTON (% TOTAL) #1	TABELLARIA 81%	COELOSPHAERIUM 60%
#2		ASTERIONELLA 15%
#3		OSCILLATORIA 10%
PHYTOPLANKTON ABUNDANCE (cells/mL)		2125.0
CHLOROPHYLL-A (µg/L)		9.41
DOM. ZOOPLANKTON (% TOTAL) #1	NAUPLIUS LARVAE 45%	KELLICOTTIA 39%
#2	KERATELLA 30%	NAUPLIUS LARVAE 15%
#3		POLYARTHRA 12%
ROTIFERS/LITER	6	63
MICROCRUSTACEA/LITER	13	22
ZOOPLANKTON ABUNDANCE (#/L)	20	89
VASCULAR PLANT ABUNDANCE		Scattered
SECCHI DISK TRANSPARENCY (m)		2.2
BOTTOM DISSOLVED OXYGEN (mg/L)	3.8	0.0
BACTERIA (fecal col., #/100 ml) #1		30
#2		10
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 3.6 Hypolimnion volume (m³): 49000

CHEMICAL:	Lake: SHADOW LAKE Town: WINDHAM					
	5 March 1987		27 6	27 August 1986		
DEPTH (m)	2.5	5.0	2.0	4.5	7.0	
pH (units)	6.2	6.3	7.1	6.5	6.7	
A.N.C. (Alkalinity)	8.0	9.4	12.6	12.1	29.4	
NITRATE & NITRITE NITROGEN	0.17	0.25	< 0.05		< 0.05	
TOTAL KJELDAHL NITROGEN	0.40	0.40	0.48	0.48	1.08	
TOTAL PHOSPHORUS	0.020	0.017	0.018	0.024	0.073	
CONDUCTIVITY (p mhas/cm)	138.5	162.1	151.0	152.0	185.0	
APPARENT COLOR (cpu)	65	65	65	65	115	
MAGNESIUM			1.25			
CALCIUM			7.5			
SODIUM			16.4			
POTASSIUM			1.90			
CHLORIDE	28	34	33		35	
SULFATE	8	8				
TN : TP	29	38	27		15	
CALCITE SATURATION INDEX			2.2			

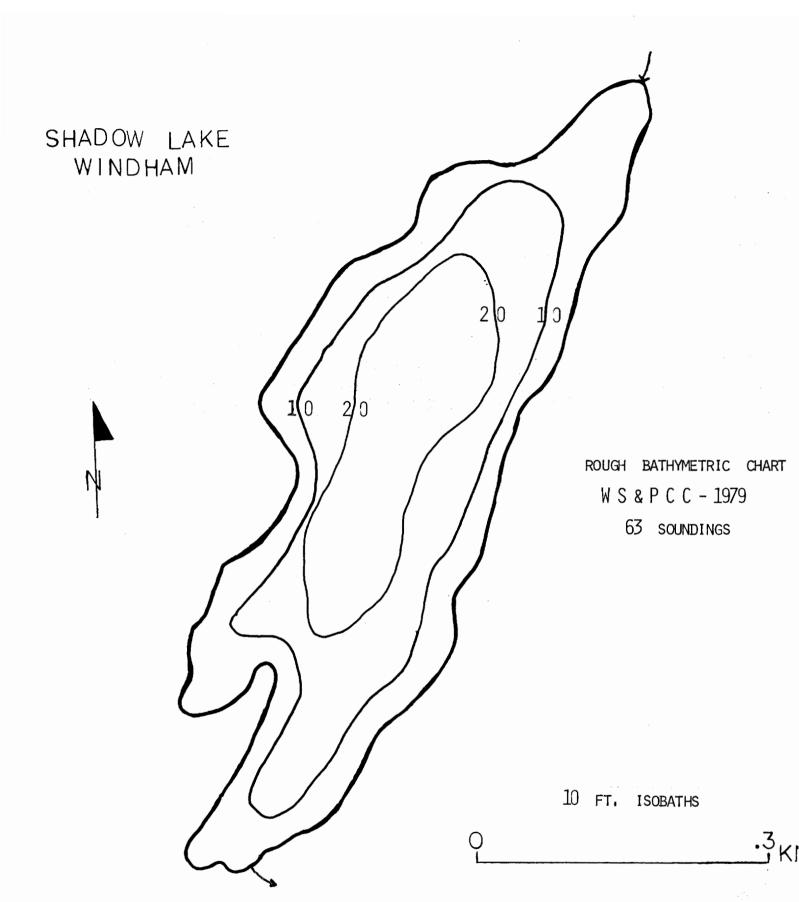
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1986

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
5	2	1	1	9	Meso.

COMMENTS:

- 1. Previously called Hitytity Pond.
- 2. The whole-water phytoplankton was 85% blue-greens. The dominant genera were Lyngbya (55%), Oscillatoria (15%), and Spirulina (15%).
- 3. No public access for boats; a small beach was located along Route 111.
- 4. Cottages were very close together and very close to the water along Rt. 111.
- 5. Tea colored water.
- 6. Lake was previously surveyed in 1976. It was not re-sounded in 1986. There was no change in trophic status but chloride and conductivity levels increased 130% and 90% respectively between 1976 and 1986.



FIELD DATA SHEET

LAKE: SHADOW LAKE

DATE: 08/27/86

TOWN: WINDHAM

WEATHER: OVERCAST, COOL, LIGHT BREEZE

DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	22.0	7.7	87 %
1.0	22.0	7.5	85 %
2.0	21.9	7.5	82 %
3.0	20.0	6.0	65 %
4.0	14.8	0.5	5 %
5.0	11.5	0.0	0 %
6.0	9.9	0.0	0 %
7.0	9.0	0.0	0 %
7.5	9.0	0.0	0 %

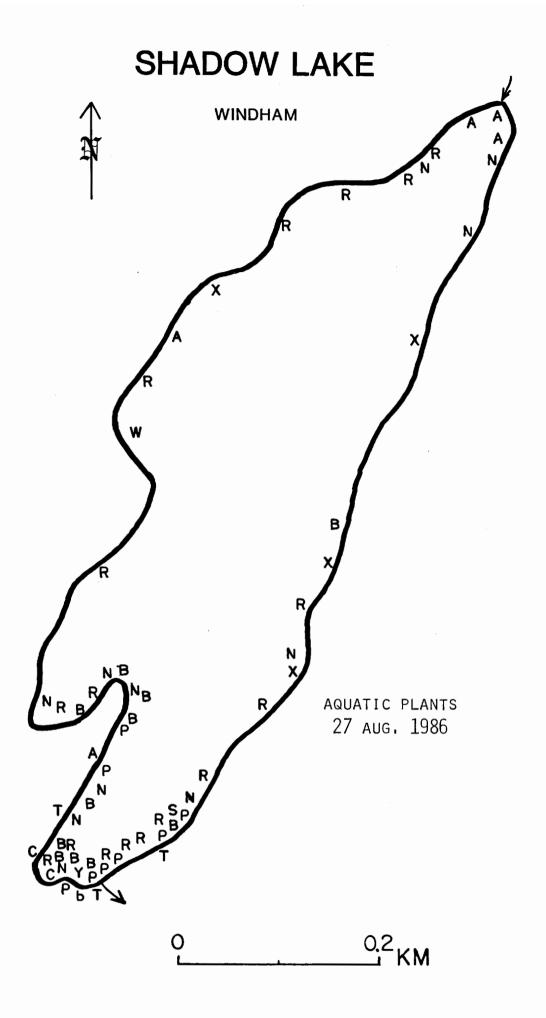
SECCHI DISK (m): 2.2

COMMENTS:

BOTTOM DEPTH (m): 8.0

TIME: 1121

*Dissolved oxygen values are in mg/L



AQUATIC PLANT SURVEY

LAK	E: SHADOW LAKE	TOWN: WINDHAM	DATE: 08/27/86	
Key	PLANT	NAME	ABUNDANCE	
пеу	GENERIC	COMMON	ABUNDANCE	
R	Potamogeton robbinsii	Robbins pandweed	Common	
Р	Pontederia cordata	Pickerelweed	Sparse	
S	Sparganium	Bur reed	Sparse	
N	Nymphaea	White water lily	Scattered	
В	Brasenia schreberi	Water shield	Scattered	
Ь	Scirpus	Bulrush	Scattered	
Υ	Nuphar	Yellow water lily	Scattered	
С	Chara	Stonewort	Scattered	
Α	Sagittaria	Arrowhead	Scattered	
Χ		Bottom growth	Common	
W	Potamogeton	Pondweed	Scattered	
Т	Typha	Cattail	Scattered	

OVERALL ABUNDANCE: Scattered

GENERAL OBSERVATIONS:

- 1. Plants were locally abundant at the outlet area, but sparse to scattered elsewhere.
- 2. Water was turbid at the inlet (north) end.